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The original Revised Shapley-Ames galaxy sample of almost 1300 galaxies has been augmented with further bright galaxies from the RSA appendix as well as newer galaxy catalogs. A complete and homogeneous, strictly magnitude-limited all-sky sample of 2345 galaxies brighter than 13.4 in apparent blue magnitude was formed. New 21cm HI line observations for more than 600 RSA galaxies have been combined with all previously available HI data from the literature. This new extensive data set allows detailed tests of widely accepted "standard" reduction and analysis techniques.

Derived global galaxian properties show several clearly non-intrinsic trends with parameters solely related to the observer, like distance, inclination, etc. Separation of the different effects is possible. There are strong indications that procedures commonly used to derive inclinations and internal absorption corrections are far less certain than believed hitherto. From a detailed study of inclinations derived from optical axial ratios it becomes evident that such values are in error by  $\pm 15$ -20 degrees, independent of the actual inclination. Even though the error distribution is symmetrical (i.e. the optically derived inclinations don't seem to carry a systematic error) this large error makes claims of exceedingly accurate galaxy distances from the application of the infrared Tully-Fisher relation somewhat suspect.

Variations of the intrinsic flattening of galaxies within the same morphological class can, at best, explain only part of the effect, since the resulting error distribution would not be symmetrical. A more natural (but also more radical) assumption is that of non-circular symmetry in galactic disks at an average ellipticity level of about 0.9 (b/a). While such asymmetries have, so far, paid particular attention to them with regard to the deduction of global properties. If disk galaxies are often triaxial one would expect many objects where the galactic center does not coincide with the geometric center.

Another problematic data correction procedure is the application of a luminosity correction for internal absorption in external galaxies. The RSA correction procedure, based on earlier work by Holmberg, prescribes the largest corrections for early-type (Sa) galaxies with a slow decrease toward late types (Sm/Irr).

The fractional mass contained in the ISM, however, steadily increases from early to late types. If gas-to-dust ratios are meaningful quantities at all, one would expect to see more dust where there is more gas, i.e. in late-type spirals and irregulars. Indeed, it is readily apparent from photographic catalogs of galaxies that late-type galaxies show far more patchiness and dust than early-type galaxies. A correction procedure similar to that proposed by Kodeira and Watanabe seems far more realistic than the traditional formulae. The cause for the apparent failure of the RSA approach might well be variations in bulge-to-disk ratios and disk flattenings among galaxies with similar morphological type. This would cause significant shifts in the Holmberg diagram used to determine the coefficients for the standard formula.

Both corrections discussed above are vital for the Tully-Fisher relation diagram. In those cases where a better determination can be made the scatter around the Tully-Fisher relation seems unaffected. This would imply that a large part of the currently observed scatter is truly intrinsic to the relation. Therefore, results from the Tully-Fisher relation of groups and clusters should be preferred over those using individual galaxies.

A very small but significant fraction of the field galaxy sample so abundant in the RSA appears deficient in neutral hydrogen at levels conventionally associated only with cluster galaxies, i.e. by factors  $> 2$ . A more detailed study of the galaxies concerned is needed before any better conclusions can be reached.

Earlier results that the total mass of spiral galaxies (similar to masses among stars) carries the major part ( $< 60\%$ ) of the variance in global properties are confirmed.